PULSED LASER SOURCES

Abstract of the Disclosure

Various embodiments include modelocked fiber laser resonators that may be coupled with optical amplifiers. An isolator may separate the laser resonator from the amplifier, although certain embodiments exclude such an isolator. A reflective optical element on one end of the resonator having a relatively low reflectivity may be employed to couple light from the laser resonator to the amplifier. Enhanced pulse-width control may be provided with concatenated sections of both polarization-maintaining and non-polarization-maintaining fibers. Apodized fiber Bragg gratings and integrated fiber polarizers may be also be included in the laser cavity to assist in linearly polarizing the output of the cavity. Very short pulses with a large optical bandwidth may be obtained by matching the dispersion value of the fiber Bragg grating to the inverse of the dispersion of the intra-cavity fiber. Frequency comb sources may be constructed from such modelocked fiber oscillators. In various exemplary embodiments, low dispersion and an in-line interferometer that provides feedback, assist in controlling the frequency components output from the comb source.

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